3.5 Showing Lines are Parallel

Postulate 9
Corresponding Angle Converse
If corresponding∠s are ≅, then the lines are ||.

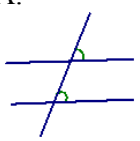
Theorem 3.8
Alternate Interior Angle Converse
If alternate interior∠s are ≅, then the lines are ||.

Theorem 3.9
Alternate Exterior Angle Converse
If alternate exterior∠s are ≅, then the lines are ||.

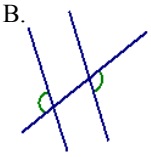
Theorem 3.10
Same-side Interior Angle Converse
If same-side interior∠s are supplementary, then the lines are ||.

Are the given lines parallel?
If yes, why?

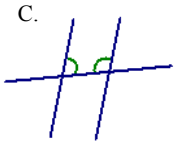
A. yes, corr. ∠s



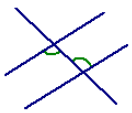
B. yes, alt. ext.



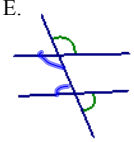
C. no



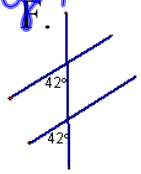
D. yes alt. int



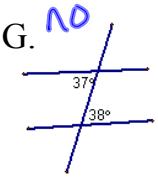
E. no



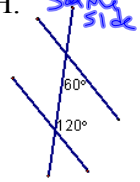
F. yes, corr.



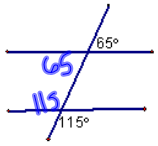
G. no



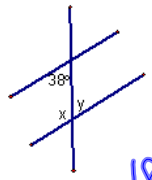
H. yes same side int



I. yes same side int

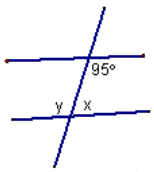


Find the value for x and y, so that the lines are parallel.



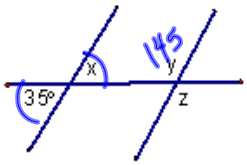
y = 38

180
-38
x = 142



y = 95

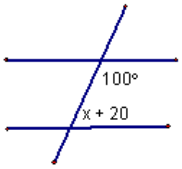
180
-95
x = 85



35 = x

z = 145

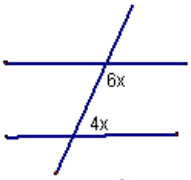
180
-35
y = 145



x + 20 + 100 = 180

x + 120 = 180

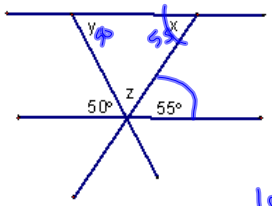
x = 60



4x + 6x = 180

10x = 180

x = 18



x = 55

y = 50

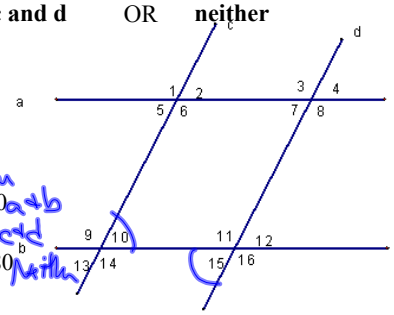
z = 75

180
-105
75

Which lines are parallel based on the given information?

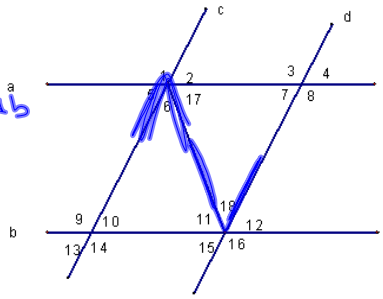
a and b OR **c and d** OR **neither**

1. ∠1 ≅ ∠9 a ∥ b
2. ∠13 ≅ ∠15 c ∥ d
3. ∠7 ≅ ∠12 a ∥ b
4. ∠3 ≅ ∠16 a ∥ b
5. ∠1 ≅ ∠16 Neither
6. m∠8 + m∠12 = 180 a ∥ b
7. m∠2 + m∠3 = 180 c ∥ d
8. m∠10 + m∠15 = 180 Neither
9. ∠13 ≅ ∠12 c ∥ d
10. ∠1 ≅ ∠6 Neither



11. $\angle 11 \cong \angle 17$ a∥b

12. $\angle 18 \cong \angle 6$ c⊥d



HW
p. 139-142
#s 3-5, 10-15, 18-21, 24-29, 35, 36